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ABSTRACT

In addition to achievement, school climate and psychosocial adjustment among students are important criteria in evaluating school based intervention programs. This study examined the effectiveness of the School Development Program (SDP) in an inner city school system. The program applies principles of social and behavioral science to every aspect of a school to improve its climate and the academic and social growth of its students. It consists of four basic components: (1) a mental health team, (2) a school governance and management body, (3) parent involvement, and (4) curriculum and staff development. Of the eight comparable schools studied, four implemented SDP and four schools did not. The schools were comparable in terms of achievement and demographics. The randomly selected sample consisted of 142 students from SDP schools and 111 from control schools. Significant differences were found in favor of the schools with the intervention program in the following areas: (1) student achievement, (2) behavior measures, and (3) school climate. (Author/LHW)

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Psychosocial And Academic Effects of An Intervention Program Among Minority School Children

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Abstract

In addition to achievement, school climate and psychosocial adjustment among students are important criteria for assessing the effectiveness of school based intervention programs. The present study examined the effectiveness of an intervention program in an inner city school system. Four schools experienced the program and four comparable schools did not. The schools were comparable in terms of achievement and demographic characteristics. The sample of students consisted of 142 randomly selected students from intervention schools and 111 randomly selected students from control schools. Significant differences in favor of intervention students were found on achievement and behavior measures. Significant school climate differences were also found in favor of intervention schools.

Student achievement has traditionally been viewed as the best measure of effective education. Social competence and psychological well being have seldom been used as barometers of a healthy educational program. They have often been relegated to secondary importance within the context of the school. The school has been viewed and still is viewed by many as a place where teaching and learning occur with little importance attached to affective concerns. Many educators still subscribe to the stimulus-response model of learning which minimizes the importance of affective mediating states in the learning process. Yet, the existence of mental health services in most schools is evidence that affective concerns are critical elements of learning. However, the traditional forms of mental health services in schools has been the treatment of psychosocial or behavior problems among children after they occur. The mental health focus of the present study has been a systems approach to preventing psychosocial and behavior problems.

There is an increasing body of literature which emphasizes the importance of social competence and affective states among students and the need for intervention strategies to address these as primary goals. Classroom teachers themselves have come to recognize that academic achievement is only one dimension in the success profile of a school or classroom. The evidence shows an increasing awareness among teachers that social competence and intra personal, affective states are significant and

important concerns that need to be given much greater attention (Raven, 1977; Harootunian and Yager, 1981; Prawat, 1985).

Students have psycho-social needs which school programs should address. Everston et al (1980) reported that students gave higher ratings to teachers who were more caring, warm and supportive. These were teachers who placed high priority on the affective climate of their classrooms. Comer (1980) commented on the importance of structuring school and classroom climate and activities to meet the idiosynchratic needs of children.

There is strong evidence that social competence and psychological well being among students are significantly and positively related to academic achievement (Purkey, 1970; Kifer, 1973; Bloom, 1977; Dean, 1977; Everston, Anderson, Anderson, and Brophy, 1980). This being the case, it would seem that any program which positively impacts social competence and psychological well being is likely to also have a positive effect on student achievement.

The present study was conducted to test the effect of an innovative school intervention program on student behavior, attitude and achievement. The program, called the School Development Program, was developed by Dr. James Comer, Professor of Child Psychiatry at the Yale Child Study Center. The basic premise of the program is that the creation of a cooperative, supportive environment in schools and classrooms has a positive effect on student well being which eventually becomes manifest in higher academic achievements.

The School Development Model (SDP)

The School Development Program has as its underlying premise the belief that the application of social and behavioral science principles to every aspect of a school program will improve the climate of relationships among all involved and will facilitate significant academic and social growth of students. The details of the model are outlined in Dr. Comer's book, School Power (Free Press, 1980). The major goals of the program are to:

1. modify the climate--social and psychological--of the school in a way that facilitates learning;

2. improve student achievement and enhance basic skills, particularly reading and mathematics;

3. raise motivation for learning, mastery and achievement in a way which will increase academic and occupational aspiration levels of each child;

4. develop patterns of shared responsibility and decision making among parents and staff.

The program consists of four basic components. These are described as follows:

1. Mental Health Team

a) works with the school's governance and management body to enable it to base its academic, social climate and staff development programs on mental health, child development principles;

b) facilitates the many interactions between parents and school staff to improve the social climate and cooperation throughout the school community;

c) works with classroom teachers and parents to identify children who need special services;

d) sets up individualized programs for children with special needs, using the school's special education facilities and staff and other school-based or outside services as necessary and possible;

e) works with classroom teachers to develop classroom strategies to prevent minor problems from becoming major;

f) offers on-going consultation to all school staff to bridge the gap between special education and general classroom activities;

g) provides consultation and training workshops to staff and parents on child development, human relations and other mental health issues.

2. The School Governance and Management Body

The school governance and management body includes the school principal, a mental health team member and representatives selected by teachers and parents

This group:

a) meets on a regular basis to carry out systematic school planning, resource assessment and mobilization, program implementation and program evaluation and modification;

b) establishes policy guidelines in all aspects of the school program--academic, social and staff development;

c) works closely with the parent group to plan an annual school calendar to integrate social, academic and staff functions;

d) works to facilitate social skill development and academic learning.

3. The Parents Program

The parents program assists and encourages parents to:

a) participate in the general parent-teacher membership group, which plans and implements social and extracurricular activities (in cooperation with the governance and management group) in support of the school academic, social and psychological development goals for students;

b) select two or three members to serve on the governance and management group;

c) assist classroom teachers for special events or field trips;

d) become more closely involved in their child's education through parent-teacher conferences, home learning activities or special classroom visits;

e) address issues of personal or family development through workshops or discussions on topics of importance to parents.

4. The Curriculum and Staff Development Program

The curriculum and staff development program focuses on the specific needs of teachers, although parents and mental health team members are included in the planning and implementation of the specific activities. This program:

a) integrates academic, arts, social and extracurricular activities into a unified curriculum;

b) encourages teachers to develop special curriculum units in skill areas most needed to underdeveloped student populations--government, business, health and nutrition, and leisure/spiritual time activities;

c) organizes and facilitates periodic workshops (for teachers and parents) based on identified needs and program objectives at the building level rather than central office level;

d) develops new skills in areas such as teaching based on child development principles, positive teacher-student relations, teacher-parent cooperation or reading and mathematics teaching techniques and materials.

METHOD

Dependent Measures

The dependent measures for this study were: Student achievement measured by the California Achievement Test (CAT) and Classroom Reading and Math Grades; Student self-concept measured by the Tennessee Self-Concept Scale (Fitts, 1964); Student behavior measured by the Teacher Questionnaire (Conners, 1969) and the Behavior Description Questionnaire (Comer, Hamilton-Lee, McCombs, Haynes and Boger, 1985) and school climate measured by the School Survey (Comer, Hamilton-Lee, McCombs, Haynes and Boger, 1985).

The Tennessee Self-Concept Scale contained 100 self-descriptive statements in which students were asked to indicate whether each statement was completely false, mostly false, partly false, mostly true or completely true of them. It reportedly has test-retest reliability coefficients of between .70 and .92.

The Teacher Questionnaire contains 39 items which are factored to form three subscales. The subscales are: classroom behavior, group participation and attitude toward authority. Teachers are asked to rate students on each item on a four point scale (0-3). Since the items are negatively worded a low score was better than a high score. The scale reportedly has test-retest reliability coefficients of between .71 and .91.

The Behavior Description Questionnaire contains 24 self-descriptive statements and students are asked to rate themselves on a four point scale (1 to 4). The School Survey contains ten statements which describe aspects of the school climate and teachers are asked to respond on a four point scale (Strongy disagree=1 to strongly agree=4). No reliability data are yet available for the Behavior Description Questionnaire or the School Survey.

Subjects

The subjects for the study were 253 randomly selected children in grades 1-6 from 8 schools, four program schools (using the SDP model) and four non-program (control) schools. There were 142 children from program schools and 111 children from control schools. The groups were roughly equally composed of males and females. The four program and four non program schools were equivalent in terms of demographic characteristics such as students' ethnic origin, socioeconomic status and academic standing on standardized tests. Based on Chapter 1 data the pupil populations of all eight schools were considered low income and their ethnic composition ranged from 76% to 98% Black. In terms of academic achievement as tested by the California Achievement Tests students enrolled in these schools were

functioning below national standards at all grade levels in math and reading. The absenteeism rate for program schools ranged from 9-11% and for non program schools from 8-10% (Mitchell, 1985).

Procedures

The administration of instruments to students occured in their respective schools at pre-arranged times. The Tennessee Self-Concept Scale and the Behavior Description Questionnaire were administered in one session by the researchers. The Teacher Questionnaire was given to teachers to complete on each child and the completed questionnaires were returned to the research team.

ANALYSIS

One-way analyses of variance procedures were performed on the dependent measures, except the California Achievement Test to determine if program students differed significantly from control students. The scores on the California Achievement Test were classified as being at/above or below grade level and a 2 (SDP, non SDP) X 2 (at/above average, below average) chi square analysis was done to determine if significantly more program students than non-program students were at/above, or below grade level.

Results

In table 1 are presented the mean scores for the groups on the dependent measures as well as the `desired' or `best' mean. Tables 2-4 show the significant differences found.

TABLE 1

Mean for SDP and NonSDP Groups on Dependent Measures

Measures	SDP	NonSDP (Control)	Desired
Student Measures	x	x	x
Self-Concept	2.3	1.4	4.0
Child Behavior (child's evaluation)	1.7	1.3	2.0
Assessment of Classroom Environment	.60	.40	2.0
California Achievement Test*			
Classroom Reading Grade	2.08	1.90	4.0
Classroom Math Grade	2.00	2.00	4.0
Parent Measures			
Child Behavior (parents' evaluation)	.46	.40	2.0
Teacher Measures			
**Children's Attitude Toward Authority	.25	.53	0
**Children's Classroom Behavior	.14	.21	0
**Children's Group Participation	.18	.60	0
Children's Overall Behavior	2.90	2.20	4.0
Teachers' Assessment of their School Climate	1.54	1.01	4.0

*Means were not calculated because of the differences represented by each grade's desired grade equivalent score.

**On these measures, where the indicated desired x=0, the items were negatively worded. SDP groups tended to have lower mean scores on these measures, thus did "better" than nonSDP groups.

TABLE 2

Summary of Significant Results from the Analysis of Variance

Dependent Measure	SDP x	NonSDP (Control) x	Df	Mean Square	F	Significance
Classroom Behavior	.14	.21	1,251	1.557	4.814	.029
Group Participation	.18	.60	1,251	1.046	4.617	.033
Attitude Toward Authority	.25	.53	1,251	.895	4.496	.035
Teachers' Assessment of their School Climate	1.54	1.01	1,251	17.304	9.542	.002

Table 2 indicates that significant mean differences were found between SDP and nonSDP groups on classroom behavior, group participation and attitudes in favor of the SDP group. Teachers who evaluated SDP students on these measures tended to evaluate them more positively than teachers who evaluated nonSDP students. The table also reveals that teachers in schools where the SDP program was in effect gave the climate of their school significantly higher ratings than did their counterparts in nonSDP schools.

When the Analysis of Variance procedures were repeated with grade level as a controlling variable, significant differences on achievement were observed. These are summarized in Table 5.

Table 3

Summary of Significant Achievement Differences

Grade Level	n	Dependent Measure	SDP x	NonSDP (Control) x	Df	Mean Square	F	Significance
4	50	Classroom Reading	2.36	1.50	1,48	9.189	5.797	.02
4	50	Classroom Math	2.36	1.64	1,48	6.401	3.864	.05
5	17	Classroom Reading	2.60	1.43	1,15	19.415	18.073	.001
5	17	Classroom Math	2.50	1.14	1,15	22.878	36.675	.000

The data presented in Table 3 indicates that at grades 4 and 5 significant mean differences occurred on classroom reading and math grades in favor of the SDP groups. No such significant differences were found to exist at grade levels 1-3 or at grade 6.

Table 4 indicates that a significant relationship existed between a student's involvement in the SDP program and his/her performance on the CAT reading component. Significantly more program students scored at or above grade level than control students.

TABLE 4

Summary of Significant Chi Squares for CAT Reading

	n	# and % at or Above Grade Level	# and % Below Grade Level	x	df	Significance
Grade 3						
SDP	39	31 (80)	8 (20)	3.95	1	.05
NonSDP (Control)	28	15 (54)	13 (46)			
Grade 4						
SDP	28	24 (86)	4 (14)	9.12	1	.0025
NonSDP (Control)	22	9 (41)	13 (59)			

Note: ( )=percent

Given the significant differences on the behavioral measures and the climate measure (Table 2) and given the significant differences on achievement measures for 4th and 5th graders (Table 3), pearson moment correlation coefficients were computed between the behavioral/climate and achievement measures to establish the nature of the relationship between them. The results of this analysis are summarized in Table 5.

Table 5

Significant Correlation Coefficients between

Achievement and Behavioral/Climate Measures

Achievement	Classroom Behavior	Group Participation	Attitude Toward Authority	School Climate
Reading	.36	.21	.23	.24
	p = .001	p = .04	p = .03	p = .03
Math	.32			
	p = .004			

The results indicate modest but significant correlations between reading grades and all of the behavioral/climate measures. Math grades correlated modestly but significantly with only overall classroom behavior.

2.4 Discussion

The basic proposition or thesis of the School Development Program (SDP) is that the application of social and behavioral science principles to every aspect of a school program will improve the climate of relationships among all involved and will facilitate significant academic and social growth of students (Comer, 1980). While the results reported and discussed here provide a measure of support for this thesis, much more work and study need to be done to provide long term evidence of the value of SDP in enhancing school climate, improving student behavior and increasing student achievement.

The examination of differences between SDP and nonSDP groups indicated that in several areas the existence of the SDP program made a significant difference. SDP teachers evaluated their school's climate significantly more positively than teachers in nonSDP schools (Table 2). This finding is especially important because it is the basic philosophy of the SDP approach that a positive change in school climate undergirds all other improvements such as student behavior and academic achievement. In fact, it is expected that other improvements may lag behind improvements in school climate until the climate becomes strong and stable enough to generate, encourage and support other improvements. Thus, the observation of significant differences also between SDP and nonSDP students on measures of classroom behavior, group participation and attitude in favor of SDP students (Table 2), is noteworthy. The concurrent occurrence of strong positive climatic changes and strong behavioral and attitudinal differences offer almost

irrefutable evidence that SDP is doing what it purports to do.

A further examination of group differences by grade level provided even more significant results. It was noted that at grades 4 and 5 SDP students performed significantly better than nonSDP students in reading and math (Table 3). In fact, the mean differences in favor of SDP students were very large, especially at grade 5. It is clear that even at this early stage of its implementation in the particular school district, the SDP is already beginning to impact achievement, in addition to climate and behavior. It is indeed noteworthy that the positive impact on academics is occurring at grades 4 and 5 before it is evident at other grade levels. This is a phenomenon that is worthy of further study. Why is the SDP having its early impact on achievement at grades 4 and 5 and not at grades 1-3 or grade 6? This question will be explored in future research.

Another measure of achievement considered in the study was the California Achievement Test (CAT). Because of the nature of this test and the way it is interpreted, it was not used in the analysis of variance procedures which examined significant differences. Students were classified as being at/above grade level or below grade level on the reading and math components of this test. A 2 x 2 chi square analysis was then performed using SDP, nonSDP as two levels of the other dimension. The purpose of this analysis was to see whether a student's standing on the CAT depended to a significant degree on his/her SDP status. At grades 3 and 4 this was found to be the case (Table 4). Thus, again, it was found that having been involved in the SDP program had positive impact on achievement,

in this case on the CAT at grades 3 and 4. The results at grade 4 were especially significant. Since a significant difference on classroom reading and math was also noted at grade 4, it would appear that the SDP may be having its greatest early impact on achievement at this level.

In combining the results of the analysis of variance and the chi square analysis, one may conclude, albeit tentatively, that the SDP is already impacting school climate, student behavior and attitudes and student achievement at grades 3, 4, and 5, but particularly at grade 4. The significant correlations between the behavioral/climate measures and achievement offer evidence that the positive impact of the program on behavior and climate is being translated into higher achievement, especially on reading.

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